

REMARKS

Claims 1-109 are pending.

Claims 1-21, 25-86, 89-109 were withdrawn pursuant to a restriction requirement, the requirement having been traversed. Claims 22-24 and 87-88 were examined on the merits.

Pursuant to the Examiner's request on page 2 of the Office Action, Applicants have submitted herewith the Hoogenvard reference cited on page 6 (Exhibit A) and the McCarthy and Bening reference cited on page 7 (Exhibit B) of the specification.

Claims 22-24 and 87-88 were rejected under 35 U.S.C. § 112, ¶ 1 as purportedly containing subject matter not disclosed in the specification to enable one skilled in the art to make and/or use the invention. Specifically, the Examiner stated that the specification is purportedly not enabling for making functionalized nanotubes of claim 22 where R is SO₃H, SH, SR', Si—(OR')_y—R'_{3-y}, Si—(O—SiR'₂)—OR', Li, Hg-X, and Mg-X. Applicants respectfully disagree and submit that the specification is enabling for these claims.

Initially, Applicants note that this basis does not apply to claim 87-88 and that no other reason was provided as to why claims 87-88 were not enabled - thus withdrawal of this rejection for claims 87-88 is respectfully requested.

As the Examiner is aware, the test for enablement is whether the experimentation, if any is necessary to practice the invention, is undue. MPEP § 2164.01. The patent preferably omits what is well known in the art. MPEP § 2164.01. Whether such experimentation is undue depends on a number of factors, such as the state of the prior art, the level of one of ordinary skill, the existence of examples, the quantity of experimentation needed, etc. MPEP § 2164.01(a). Applicants respectfully submit that the specification is enabling for the examined claims because experimentation, if any is needed (Applicants submit that none is needed), is not undue.

First, it is within the purview of one of ordinary skill in the organic chemistry art to synthesize different functional groups based on the teachings of the Applicants' specification. There are numerous examples disclosed in the specification which teach how to functionalize the nanotubes, including with functional groups made from or containing sulfuric acid, silane, and metals, oxides, etc. (Specification, pp. 19-48). Applicants' examples even disclose a number of textbooks (e.g., March, J.P., Advanced Organic Chemistry, 3rd Ed. Wiley, NY 1985; House, H., Modern Synthetic Reactions, 2nd Ed. Benjamin/Cummings, Menlo Park CA 1972) for one of ordinary skill in the art to further review if he/she so wishes. Thus, a skilled artisan, upon reviewing Applicants' specification, would be able to practice the full scope of the invention claimed by Applicants.

Furthermore, since, as the Examiner admits, the specification is enabling for making functionalized nanotubes of claim 22 where R is COOH, NH₂ OH, CHO, CN, COCl, halide, COSH, COOR', SiR'₃, R'', AlR'₂, and TiZ₂, it logically follows that one of ordinary skill in the organic chemistry art would also be able to make the functional nanotubes of claim 22 where R is SO₃H, SH, SR', Si—(OR')_y—R'_{3-y}, Si—(O—SiR'₂)—OR', Li, Hg-X, and Mg-X (whether or not Applicants' specification teaches this specifically) since these chemical groups and substitutions are well known in the art. Coupled with Applicants' teachings as explained in the preceding paragraph, Applicants thus respectfully submit that claims 22-24 and 87-88 are enabled by the specification and respectfully request withdrawal of this rejection.

Applicants further respectfully request, upon allowance of a generic claim, that all of the elected Group I claims (i.e., claims 1-43, 79, 87-89 and 95-98) be considered for examination on the merits.

No additional fee is believed due. If there are any such fees, the Commissioner is authorized to charge any deficiency or credit any overpayment to our Deposit Account 50-0540.

Respectfully submitted,

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